

### REMARKS

Claims 5-8 are now pending in this application. Claims 1-4 are rejected. Claims 1-4 are cancelled herein. New claims 5-8 are added.

The Abstract of the disclosure has been objected to for a minor informality. The Abstract has been amended as appropriate and it is respectfully requested that the objection to the Abstract be withdrawn.

The disclosure has been objected to. The Office Action has requested that Applicant determine whether "clinker" is an error in translation. Applicant has researched the situation and has determined that "clinker" is not a translation error. As suggested by the Examiner, the word "splaying" has been changed to "spraying."

Claims 1-4 have been rejected under 35 U.S.C. § 112, second paragraph, as indefinite. The Office Action stated that claim 1 should be written to set forth positive, interrelated structural limitations. Claim 1 has been cancelled, making its rejection moot.

The Office Action states that "said adjustment" in claim 2 does not have antecedent basis. Claim 2 has been cancelled, making its rejection moot.

The Office Action states that it is unclear how in claim 4 both "alumina" and "aluminum" comprise a composition in the adhesive. Claim 4 has been cancelled, making its rejection moot. Claims 5 and 6 have been added and are believed to be definite claims.

Claims 1 and 2 have been rejected under 35 U.S.C. § 103(a) as obvious over JP 8-57601 (JP '601) in view of JP 62-24846 (JP '846). Claims 1 and 2 have been cancelled, making their rejection moot.

Claims 5-8 have been added and it is Applicant's position that they are patentable over JP '601 in view of JP '846. To establish a *prima facie* case of obviousness, it is necessary to show that all the claim limitations are taught or suggested by the prior art. *See In re Royka and Martin*, 180 USPQ 580, 583 (CCPA 1974); MPEP § 2143.03.

JP '601 fails to disclose or suggest the characteristics of the adhesive recited in claims 5-8. For example, JP '601 fails to disclose or suggest an adhesive comprising a refractory aggregate containing 70 mass % or more of MgO as a primary component, the MgO having a particle size of 0.5mm or less and a purity of 95% or more, as recited in claims 5, 7, and 8. JP '846 similarly fails to disclose or suggest the characteristics of the adhesive. Accordingly, claims 5, 7, and 8 are patentable at least for this reason over JP '601 in view of JP '846. Claim 6 is patentable at least for the reason that it depends from a patentable base claim. *See In re Fine*, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988); MPEP § 2143.03.

Furthermore, JP '601 does not disclose the mortar having the porosity recited in claims 5-8 and the Office Action relies on JP '846 for this teaching. The Office Action states that the inner wall refractory layer of the nozzle in JP '846 is advantageous for absorbing alumina and for improving heat resistance and that

therefore it would be obvious to use it in JP '601 between the nozzle body and the inner hole body. However, JP '846 discloses nothing about a joint between a CaO containing refractory layer and an exhaust port of a nozzle or about using the inner wall refractory layer in any kind of joint. Thus, one of ordinary skill in the art would not take the refractory layer disclosed in JP'846 and use it as mortar between a CaO containing refractory layer and an exhaust port of a nozzle. Furthermore, the mortar in JP '601 is covered by the inner hole body which will shield the mortar from the heat and block it from absorbing alumina. Thus, there is no motivation for the combination of JP'601 and JP'846. Accordingly, claims 5-8 are patentable over JP '601 in view of JP '846 for this reason as well.

Claims 3 and 4 have been rejected under 35 U.S.C. § 103(a) as obvious over JP 8-57601 (JP '601) in view of JP 62-24846 (JP '846) and further in view of JP 8-283074 (JP '074). Claims 3 and 4 have been cancelled, making their rejection moot.

Claims 5-8 have been added and it is Applicant's position that they are patentable over JP '601 in view of JP '846 and further in view of JP 8-283074 (JP '074). JP '601 and JP '846 fail to disclose or suggest the characteristics of the adhesive recited in claims 5-8, as discussed above. The Office Action seeks to modify JP '601 to utilize the refractory mortar disclosed in JP '074. The Federal Circuit has stated that there must be suggestion or motivation to combine references. *See In re Mills*, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990) (emphasis

added); MPEP § 2143.01. The refractory mortar disclosed in JP '074 is utilized between bricks. There is no relationship between using refractory mortar between bricks and utilizing mortar in a joint zone between a refractory sleeve containing CaO and the inside hole surface of a continuous casting nozzle. Thus, one of ordinary skill in the art would not be motivated to modify JP '601 to take the refractory mortar placed between bricks in JP '074 and use it between the inner hole body and the nozzle body in JP '601. Accordingly, *prima facie* obviousness is absent and claims 5-8 are patentable over the cited art.

Furthermore, the Office Action states that using the refractory mortar of JP '074 in the joint zone of JP '601 would be done to reduce corrosion in the joint zone. However, there is no disclosure or suggestion in JP '601 that there is any corrosion occurring in the joint zone and therefore there is no motivation to combine the references for this reason as well. Additionally, the joint zone in JP '601 is located between the inner hole body and the nozzle body, which means that the joint zone is covered by the inner hole body which would protect the joint zone from corrosion. Thus, one of ordinary skill in the art would not attempt to protect from corrosion a joint zone which is already protected by a covering body. Accordingly, the combination of JP '601 and JP '074 is not appropriate.

Also, claims 5-8 recite a porosity of 30 - 75% for the adhesive and the Office Action has not demonstrated that the refractory mortar disclosed in JP '074 has the requisite porosity. Accordingly, for the aforementioned reasons, claims

5-8 are patentable over JP '601 in view of JP '846 and further in view of JP '074. Notice of the patentability of claims 5-8 over the cited art is respectfully requested.

New claims 5-8 have been added. Support for the claims can be found in, for example, the claims as filed; the specification in the paragraph bridging pages 3-4; in the specification on page 4, second full paragraph; and in the specification on page 5, first and second full paragraphs.

Applicant respectfully requests a one month extension of time for responding to the Office Action. **The fee of \$120.00 for the extension is provided for in the charge authorization presented in the PTO Form 2038, Credit Card Payment form, provided herewith.**


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In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,  
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